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ABSTRACT

In its relatively short history, instructional development has been greatly influenced by operant conditioning theory and methodology. This approach has been described by some as simplistic, inhuman, and inflexible. The humanistic approach, on the other hand, focuses on affective, emotional, and intellectual learning experiences. But it seems to lack a definite position and precise procedures. The two approaches are examined and compared. It is suggested, through the concept of complementarity, that both perspectives are useful and needed for a complete instructional development operation. A tentative program of action is proposed for discussion. (Author/MSE)

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A Complemental Approach to
Instructional Development

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ABSTRACT

A COMPLEMENTARY APPROACH TO INSTRUCTIONAL DEVELOPMENT

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In its relatively short history, instructional development has been greatly influenced by operant conditioning theory and methodology. This approach has been described by some as simplistic, inhuman and inflexible.

The humanistic approach, on the other hand, focuses on affective, emotional and intellectual or "gut level" learning experiences. But, it seems to lack a definite position and precise procedures.

This paper examines and compares the two approaches and advances, through the concept complementarity, that both perspectives are useful and needed for a complete instructional development operation. A tentative program of action is then proposed for discussion.

A COMPLEMENTAL APPROACH TO INSTRUCTIONAL DEVELOPMENT

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INTRODUCTION Instructional development, in its present form, is a relatively recent specialization. Its roots, however, can be traced to the empirical orientation in education during the 1830s. In 1963 the first comprehensive application of the concept started at Michigan State University and the University of Michigan under the title educational development. Further momentum was gained during the early 1970s.

By whatever name or term, and there are several, the new specialization is a blend of a number of principles borrowed from:

1. Research in learning, particularly operant conditioning.
2. New technologies, such as computer science, communication media and other delivery systems.
3. Curriculum design and course development, and
4. Scientific management, especially systems approach.

In this respect one can define instructional development as the process of systematic application of specific learning theories through the use of technologies for the purpose of developing effective and efficient learning experiences.

As is usually the case when specialists address a topic, differences of opinion lead to different practice and instructional development is no exception: two basically different approaches dominate the field. The first is behavioristic in orientation and the second is influenced by humanistic psychology.

These two approaches are the subject of my presentation. First, I shall give an outline of the behavioristic approach to instructional development; its features, propositions and methodology. A critical review is followed by a similar presentation of the humanistic approach and a comparison of the two methods. Finally, I shall advance the concept complementarity and how it may be applied to the issue before us.

BEHAVIORISM: PRE-INSTRUCTIONAL DEVELOPMENT Starting around 1954, studies in operant conditioning with infrahuman species lead to experiments with teaching machines and programmed instruction in 1960. At about the same time teams of scholars and teachers were revising curricula in mathematics, natural sciences, English and social sciences.

However, early advocates of such innovations paid little attention to the content to which they were to apply their techniques. Flaws in programs and curricula were common, little systematic attention was given to the learning environments and possible effects of the new products were erratically tested.

During the 1960's operant learning principles were applied to a wide range of teaching activities. The focus in each application differed from a true operant tradition. As a result, token economy, behavior modification, contingency management, contingency contracting, competency-based learning and behavior engineering became familiar terms in education.

I should point out that these variations have a number of common features. Some of these features are:

1. Considerable reliance was placed on observable behavior.
2. Program design was based on a taxonomy of learning and terminal behavior.
3. Evaluation procedures were included in the initial program development.
4. Explicit descriptions were given of program objectives and procedures, such as measurable objectives and identification of entering behavior.
5. Instruction was based on operant conditioning and reinforcement principles.

In my opinion, operant conditioning and its offshoots were the forerunners of instructional development as we shall see later.

BEHAVIORISM IN INSTRUCTIONAL DEVELOPMENT You may recall from my introductory remarks that instructional development was defined as the process of systematic application of learning theories and technology for developing effective and efficient learning experiences. You may also recall that I singled out the humanistic and the behavioristic approaches as dominant in present instructional development practice.

I would like now to speak to the latter approach by first outlining its major propositions to the improvement of instruction (Gange, 1970; Diamond and other, 1975). These propositions will also indicate the degree of influence operant conditioning has on instructional development.

BEHAVIORISTIC PROPOSITIONS The first proposition is that:

1. Improvement of instruction involves the redesign of learning experiences. This includes the manipulation and control of learning conditions, delineation of specific learning tasks and sequencing of these tasks.
2. Terminal objectives should be specified and stated in measureable terms.
3. Accurate evaluation is essential to assess students' achievement.
4. Specific learning tasks can be broken down into component parts.
5. The use of more and different media and technologies can improve learning effectiveness and efficiency.
6. Systems approach can provide better management of instruction and other related functions.
7. Prepackaged or canned instructional programs can provide for individualized learning.

Having described the behavioristic approach, I should like to share with you its methods. James Nord (1971, p. 14) after studying 9 models or systems for instructional development advanced this model (Table 1). The system includes the three major steps or stages common to all systems: problem identification, software development and evaluation.

So far I have established a direct link between operant conditioning and the behavioristic approach to instructional technology, I have presented to you their seven propositions to improve instruction, and a generalized system showing how the process of development is practiced. What I did not say is that a system or a process like this can hardly be faulted. The criticism, indeed, is directed toward the way it is formulated and how the process is carried out.

TABLE 1
Instructional Development System

STAGE I: DEFINE

IDENTIFY PROBLEM	ANALYZE SETTING	ORGANIZE MANAGEMENT
Assess needs	Audience	Tasks
Establish priorities	Conditions	Responsibilities
State problem	Relevant resources	Time lines

STAGE II: DEVELOP

IDENTIFY OBJECTIVES	SPECIFY METHODS	CONSTRUCT PROTOTYPES
Terminal	Learning	Instructional materials
Enabling	Instruction	Evaluation materials
	Media	

STAGE III: EVALUATE

TEST PROTOTYPES	ANALYZE RESULTS	IMPLEMENT/RECYCLE
Conduct try-outs	Objectives	Review
Collect evaluation data	Methods	Decide
	Evaluation techniques	Act

CRITICISM OF BEHAVIORISTIC APPROACH The behavioristic approach has drawn challenges and criticism from educators, scientists, psychologists and humanitarians (Bugental, 1967; Maslow, 1968; Travers, 1968; Rogers, 1969). Here is a sample:

1. The approach assumes that the classroom teacher is at fault.
2. The subject matter or cognitive domain is considered to be more important than the student.
3. The approach is overly simplistic at best; it ignores complex and meaningful human learning.
4. Controlled learning environments such as study carrels (some call them pigeon conditioning boxes) do not allow for needed interaction among students.
5. The mere carryover of technologies from military, industry and business to education has proved costly and unsuccessful.
6. The system is designed to reach and teach the masses.
7. The system is incapable of accomodating social and conceptual changes.

Robert Travers in addressing a conference on technology and the curriculum made the following remark:

"The close historical tie that existed between operant conditioning and attempts to develop teaching machines, responsive environments, and so forth seems to have blinded us to the many other sources of knowledge that could provide a foundation for new developments in educational practice . . . but there is much more knowledge available

that has at least as legitimate a claim to being a basis for educational technology."

(Travers, 1968, p. 92).

With this remark I would like to consider the humanistic approach to instructional development.

HUMANISTIC PSYCHOLOGY AND INSTRUCTIONAL DEVELOPMENT

One of the major criticisms directed at behaviorism is that it is molded on physical sciences and that it depends heavily on technology as a model of man's thinking. Humanistic psychologists, in particular, contend that man's emotional feelings, experiences and other unique attributes must be of prime consideration in designing instruction.

The humanistic approach to instructional development questions not only the behavioristic methods but also raises questions as to who should set goals for the individual student, who should determine educational objectives and the need to examine values and relevancy of one's learning experiences.

By way of comparison, while the behavioristic approach concentrates on cognitive achievement, or what Carl Rogers calls learning from the neck up, the humanistic approach is concerned with gut level or experiential learning. In the latter the focus is on creating the kind of emotional and intellectual climates for the student to grow intellectually and affectively.

While the founders of this approach do not provide a set of formally organized postulates, the following six propositions are deduced from the literature:

HUMANISTIC PROPOSITIONS

1. All persons have a natural inclination to want to learn.
2. People will only learn and retain what is personally relevant to them.
3. Learning the process of learning is the most socially useful tool.
4. Optimum learning occurs when the individual participates responsibly.
5. Self-evaluation and self-criticism are of primary concern in education.
6. The student must participate in her/his education as a major decision maker.

In applying these concepts to instructional development, humanists chose to be eclectic. Their methods include sensitivity training, contracts, and even programmed instruction. Due to the fact that many features lie in the interactions between the students and instructors, it is difficult to describe the precise methodology used in real-life situations. The following is an extrapolation of their methods:

1. Use of Contracts: The student and the instructor agree on study goals and procedures. In some cases the contract is tied to a grade contingent upon completing the agreed upon amount and quality of work.
2. Inquiry: Discovery learning or inquiry training places greater emphasis on personally relevant educational goals as means of learning how to learn.
3. Simulation: The method is used to give much of the responsibility to the student.

4. Programmed Instruction: Is used with discretion to help individual students fill gaps or find needed information.
5. Sensitivity Training: To help students explore their feelings and to share them with others.
6. Facilitator-Learning Group: Typically made up of 7 to 10 students such a group has complete autonomy and is student directed.
7. Learning Environments: Students are given the choice to participate in a "free-class" or a more traditional highly structured group.

CHALLENGES AND CRITICISM It goes without saying that the humanistic approach has its fair share of criticism and opposition. I would like to mention a few: (Abedor and Gustafson, 1971).

1. The approach has been described as global and subjective.
2. That it lacks empirical support.
3. That its objectives are broad-based and do not lend themselves to scrutiny.
4. The approach is more of a philosophical reaction to behaviorism.
5. Students do not possess the expertise to decide on educational objectives.
6. Evaluation is typically subjective.

To conclude this part of the presentation, I would like to offer a comparison between the two approaches.

COMPARISON

1. Project: While the humanistic approach is nonlinear, long-term and emphasizes the affective domain, the behavioristic approach is linear, short-term and is primarily concerned with cognitive or psychomotor goals.
2. Criteria: When selecting a project, factors such as how much money is available, number of students enrolled, product generalization, replication and marketability are of vital importance to the behaviorist. From the humanist point of view, available human resources, effects on students and possible adoption of the process are high on the list.
3. Solution: Mediated instruction is not a dominant means in the humanistic approach, similarly when technology is used it is considered as hardware; as means to achieve specified ends in loosely structured classroom environments. The behavioristic approach requires highly structured environments where technology is treated as software and its principles are strictly observed. Mediated instructional programming is the role.
4. Outcome: Long-term gain vs. immediate, tangible, etc. . .
5. Product Assessment: Commitment, independence vs. replication.
6. Project Assessment: Trained faculty, long-term vs. diffusion.
7. Client: It is rather interesting to notice the type of faculty each orientation attracts. Opinion leaders vs. innovators.

COMPLIMENTARY APPROACH From the previous analyses, it appears that both approaches are incomplete, that despite a considerable amount of evangelistic fervor among proponents of each approach there is an acceptance of the notion that more than one approach is needed (Rogers, 1969; Gange and Briggs, 1974).

I perceive of the behavioristic and humanistic approaches as complementary to each other and that both perspectives are useful and needed for sufficient and more complete explanation of learning and efficient instructional development in the affective, cognitive and psychomotor domains. I recognize that the two approaches are incommensurable, yet it seems to me that as instructional developers design educational programs they ought to look on occasions through what is called a person centered perspective and on other occasions through the behavioristic or product centered perspective.

To illustrate: From the humanistic point of view, learning should be perceived as open encounters, interactions with the environment and interpersonal dynamics. Self-fulfillment and the affective dimensions should receive deserved attention in the design and implementation of instruction. Similarly, appropriate methods and devices perfected by behaviorism should be used to objectify subject matters and educational objectives, to quantify and validate assessment of learning and instruction and to provide the student with greater access to needed knowledge.

I would like to propose a program of action to implement such an approach: The program is made up of three components:

1. Student development (always forgotten in most, if not all, instructional development systems).
2. Faculty development, and
3. Software development.

Figure 1 illustrates such a program.

One of the first steps is to identify and interpret personal and educational goals utilizing the behavioristic and humanistic philosophies. Global and specific goals can be identified by students and teachers and further interpreted by individual students.

Preparation of learning and teaching objectives can then proceed and contracts can be written between the teacher and the individual students concerning the student's learning objectives and between the teacher and the instructional developer concerning teaching objectives.

Identification of learning and teaching environments and the development of learning and teaching experiences as well as communication skills could begin simultaneously.

Development and/or recruitment of instructional materials, other software, hardware and appropriate learning environments, such as hands-on experiences, information manipulation, and human dynamics would follow.

Implementation of the program would be followed by evaluation and revision as needed.

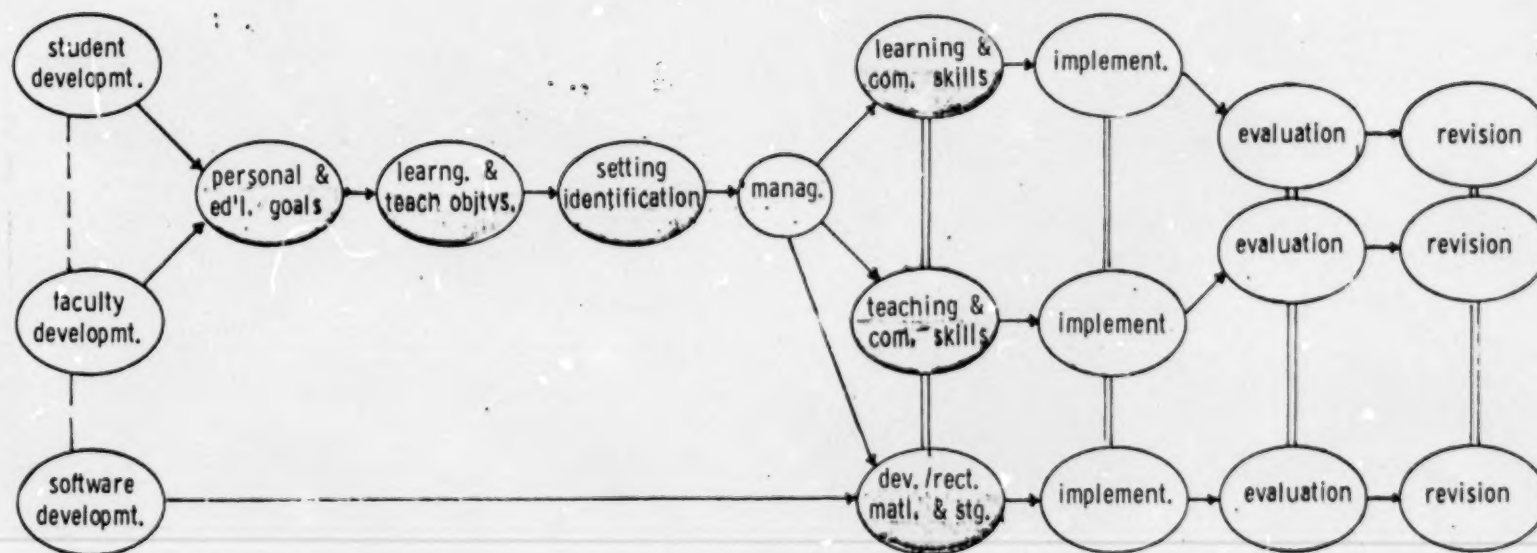
CONCLUSION In conclusion, one point I have made is that instructional development for the past 15 years has been mainly tied to achieve a traditional goal through high speed technology or the stuffing of minds with information by speeding up the human storage process.

A second point was presented that there are other psychological concepts of equal, if not greater, importance to instructional development such as those advocated by the humanistic psychology.

The thesis of this paper is that much more could be achieved by coupling existing humanistic and behavioristic approaches through the concept complementarity. That is to accept both approaches as valid and alternates for the attainment of specific ends as defined by teachers and students.

FIGURE 1

A COMPLEMENTAL APPROACH TO INSTRUCTIONAL DEVELOPMENT



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